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BY

EARL EDWARD SHERFF

RESEARCH ASSOCIATE, SYSTEMATIC BOTANY

BOTANICAL SERIES

FIELD MUSEUM OF NATURAL HISTORY

VOLUME 22, NUMBER 6

DECEMBER 24, 1940

PUBLICATION 433

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PRINTED IN THE UNITED STATES OF AMERICA
BY FIELD MUSEUM PRESS

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A NEW GENUS OF THE COMPOSITAE FROM NORTHWESTERN ALABAMA

EARL EDWARD SHERFF

Recently, through the kindness of Dr. Roland M. Harper, I have been permitted to study specimens collected by him in Franklin County, northwestern Alabama. Among these plants, all of them Compositae, were two specimens which he had suspected of representing a new genus. My own study confirms Dr. Harper's suspicion. Moreover, Dr. S. F. Blake, Senior Botanist of the United States Bureau of Plant Industry, has made an independent and carefully detailed examination of the two specimens in question and concludes likewise that they represent a new genus. Dr. Blake joins me in naming this new genus and in publishing it herewith as:

Jamesianthus Blake & Sherff, gen. nov.[1]

Capitula heterogama radiata multiflora, floribus omnibus fertilibus vel aliquot disci sterilibus. Involucri campanulati ca. 3-seriati valde gradati phyllaria pauca (ca. 15) oblonga obtusa plurinervia exteriora herbacea interiora submembranacea, ea achaenia radii subtendentia basi paulum concava non complicata. Receptaculum planum nudum foveolatum. Radii ca. 6 feminei fertiles, tubo glandulari-piloso, lamina patente anguste oblongo-ovali obscure 3-denticulata ca. 10-nervia; corollae disci tubulosae, tubo glandulari-piloso, fauce longiore anguste obconica, dentibus 5 ovato-triangularibus acutis. Achaenia radii anguste obovoidea paulum obcompressa obscure ca. 15-striata tuberculato-hispidula, basi carpopodio brevi albido apice collari annulari brevissimo albido pappifero donata achaenia disci similia subteretia vel paulum compressa. Pappus radii et disci e setis deciduis capillaribus 1-seriatis inaequalibus hispidulis paucis (ca. 6–8) e collari apicali persistente achaenii orientibus achaenii corpus saltem subaequantibus sistens. Styli basi conico-fusiformi rami lineares recurvati dorso papillosi vix hispiduli, appendice deltoidea obtusa papillosa basi lateraliter dorsaliterque breviter hispida. Antherae basi vix cordatae, appendice apicali ovata munitae.—Herba perennis erecta infra inflorescentiam simplex

[1] Named, at Dr. Harper's suggestion, in honor of Mr. Robert Leslie James, who first called the type species to Dr. Harper's attention in September, 1937, and through whose cooperation Dr. Harper was enabled to make collections and observations of it at several spots, all of them within a few miles of the type locality.

prope apicem glandulari-pilosa, oppositifolia foliis lanceolatis sessilibus vel brevissime petiolatis penniveniis remote calloso-denticulatis basi breviter hastatis, capitulis paucis terminalibus pedunculatis radiatis aureis mediocribus.

Type species: *Jamesianthus alabamensis* Blake & Sherff (*vide infra*).

Capitula heterogamous, radiate, many-flowered, flowers all fertile or some of the disc-flowers sterile. Phyllaries of the campanulate and about 3-seriate, strongly graduate involucre few (about 15), oblong, obtuse, many-nerved, outer ones herbaceous, inner ones submembranaceous, those subtending the achenes of the ray-florets somewhat concave at the base but not folded together. Receptacle flat, naked, minutely pitted. Ray-florets about 6, pistillate, fertile; the tube glandular-pilose; the ligule spreading, narrowly oblong-oval, obscurely 3-denticulate, about 10-nerved; disc-corollas tubular, the type glandular-pilose, the throat longer and narrowly obconic; the 5 teeth ovate-triangular and acute. Achenes of the ray-florets narrowly obovoid, slightly obcompressed, obscurely about 15-striate, tuberculate-hispidulous, with a short whitish gynobase at bottom, at apex capped with a very short annular collar, this whitish and bearing the pappus; achenes of the disc-florets similar, subterete or slightly compressed. Pappus of both ray- and disc-florets composed of bristles, these deciduous, capillary, 1-seriate, unequal, hispidulous, few (about 6–8), arising from the achene's persistent apical collar and at least subequal to the achene's body. Styles conic-fusiform at base; their branches linear, recurved, dorsally papillose but scarcely hispidulous; appendage deltoid, obtuse, papillose, at base laterally and dorsally short-hispid. Anthers scarcely cordate at base, with an ovate appendage at apex.—An erect, perennial herb, unbranched below inflorescence, glandular-pilose near apex, opposite-leaved; leaves sessile or very shortly petiolate, penninerved, remotely calloso-denticulate, at base shortly hastate; capitula few, terminal, pedunculate, radiate, yellow-flowered, medium-sized.

The radiate heads, naked receptacle, ecaudate anthers, and pappus of capillary bristles exclude this plant from all the tribes of Compositae except Astereae, Helenieae, and Senecioneae. The distinctions between these tribes are not always very apparent, and the placing of a genus sometimes depends more on its relationship to some already classified genus than on the presence of any particularly distinctive characters. The present plant is referred to the Helenieae-Jaumeinae because of its very close resemblance not only in habit but also in technical characters to the genus *Arnicastrum* Greenm.

Arnicastrum, a genus of a single species (*A. glandulosum* Greenm.) with a scarcely distinguishable variety (var. *vestitum* Greenm.), is known only from three collections from the Mexican states of Chihuahua and Durango. *Arnicastrum* and *Jamesianthus* are similar in habit, both being simple or little branched perennial herbs, with opposite, more or less lanceolate leaves and medium-sized yellow heads. In *Arnicastrum* the stem bears erect branches mostly from the lower axils and arises from a rhizome bearing scale-like leaves, and the heads are solitary or ternate at tip of stem and borne on long, naked peduncles; the leaves are strictly sessile, subamplexicaul, much firmer than in *Jamesianthus*, and strongly about 5-nerved from the base. The involucres of the two genera are similar, of about 3 series of oblong phyllaries, the outer thicker and more definitely herbaceous, the inner thinner and submembranous, but in *Arnicastrum* the phyllaries are of about the same length, not strongly graduate as in *Jamesianthus*. The rays and disc-corollas are strikingly similar in the two genera, and in both are pilose on the tube with gland-tipped hairs. The most mature achenes of *Arnicastrum* examined are linear-clavate, many-nerved, and slightly hispidulous. Unfortunately none of the achenes of *Arnicastrum* seem to be completely mature. Greenman described the disc-achenes as slightly compressed and 4-angled; Rydberg says that the achenes are flattened dorsoventrally. The ray-achenes, in the young state at least, are certainly obcompressed; those of the disc appear to be compressed rather than obcompressed. The stamens and style-branches offer no significant differences; the style-branches of *Arnicastrum* are pubescent with somewhat longer hairs on the back, but the terminal appendages are identical in the two genera. In *Arnicastrum* the base of the style is set in a short, cylindric nectary; in *Jamesianthus* there is no evident nectary, and the base of the style is conic-fusiform. The principal distinction between the two genera resides in the pappus. In *Arnicastrum* the ray-achenes are epappose (a feature mentioned by Greenman, but overlooked by Rydberg in the North American Flora), and the pappus of the disc-achenes consists of about 20–35 somewhat unequal, hispidulous, persistent, capillary bristles. In *Jamesianthus* the achenes of both ray-flowers and disc-flowers bear a pappus of few (about 6 to 8) decidedly unequal, capillary bristles arising from a very short whitish collar (not evident in *Arnicastrum*), and so deciduous that it has been difficult to count them exactly. The similarity of these two genera, both apparently rare and coming from regions with no particular phytogeographic connections, is quite striking.

Jamesianthus alabamensis Blake & Sherff, sp. nov.

Herba simplex vel subsimplex gracilis plerumque 6–9 dm. alta e paucis (±6) elongatis subfibrosis radicibus orta; caule subarcuato viridi subtetragono striato glabro vel sub nodis minute pubescenti, internodiis saepius 4–6 (raro –8) cm. longis et plerumque sub 3 mm. crassis. Folia opposita sessilia vel mediana brevissime (ca. 2 mm.) petiolata; lamina (saltem sicca) tenuissima subrhomboide lanceolata vel oblanceolata apice sensim vel subabrupte acuminata sub medio cuneato-angustata basi ipsa (hac 4–8 mm. lata) auriculata lobulis antrorsum flexis ±2 mm. longis saepe acriter apiculatis, graciliter penninervi, supra viridi glabraque infra pallidiori glabraque vel nervis obscure hispidula margine minutissime spinuloso-ciliata et remotissime subdenticulata, 5–9 cm. longa et 1–2.5 cm. lata. Inflorescentia usque ad ±3 dm. alta corymbosa aperta pauci- (±13-) capitulata, ramis elongatis gracillimisque (internodiis saepe 6–9 cm. longis et ±0.5 mm. crassis). Capitula gracillime pedunculata pedunculis subsparsim patenterque glandulari-pubescentibus saepius 4–8 cm. longis pansa ad anthesin 3–4 cm. lata et 10–12 mm. alta. Involucri phyllaria extima oblonga vel lineari-oblonga et ±2.5 mm. longa intima anguste ovato-oblonga et usque ad 9 mm. longa omnia extus irregulariter sparsimque pubescentia pilis glandulari-capitatis. Radii flavi, lamina 1–1.5 cm. longa, tubo ca. 4–5 mm. longo. Achaenia griseo-brunnea vel saepius atro-purpurascentia atro-rubrave, corpore 3.2–4 mm. longa.

Specimens examined: *Roland M. Harper* 3816, on shaded, gravelly, semicalcareous banks, about 4 miles north of Russellville, Franklin County, Alabama, October 7, 1940 (type, Herb. Field Mus.: cotype, Herb. U. S. Nat. Mus.).

A simple or but slightly branched herb, slender, commonly 6–9 dm. tall, arising from a few (±6) elongate, subfibrous roots; stem slightly curved, green, subquadrangular, striate, glabrous or under the nodes minutely pubescent, internodes more often 4–6 (rarely –8) cm. long and commonly under 3 mm. thick. Leaves opposite, sessile or the median ones very shortly (about 2 mm.) petiolate; blade (at least in dry state) very thin, subrhomboidally lanceolate or oblanceolate, at apex gradually or subabruptly acuminate, below the middle cuneately narrowed, at the very base (this 4–8 mm. wide) auriculate (the tiny lobes antrorsely flexed, ±2 mm. long, often sharply apiculate), delicately penninerved, above green and glabrous, below paler and glabrous or along the nerves obscurely hispidulous, at margin very minutely spinulose-ciliate and most remotely subden-

ticulate, 5–9 cm. long and 1–2.5 cm. wide. Inflorescence up to ±3 dm. tall, corymbose, open; branches elongate and very slender (internodes often 6–9 cm. long and ±0.5 mm. thick). Capitula ±13, very slenderly peduncled, at anthesis 3–4 cm. wide and 10–12 mm. tall; peduncles subsparsely and divaricately glandular-pubescent, more often 4–8 cm. long. Involucral phyllaries irregularly and sparsely pubescent on outer surface with glandular-capitate hairs; outer phyllaries oblong or linear-oblong and ±2.5 mm. long; inner ones narrowly ovate-oblong and up to 9 mm. long. Rays yellow, ligule 1–1.5 cm. long, tube about 4–5 mm. long. Achenes grayish-brown or more often becoming dark-purple or dark-red, the body 3.2–4 mm. long.

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